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# Accident Avoidance System Using IR Transmitter

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***Abstract:*** ***in this paper i had developed a system to provide the necessary to accident information to the vehicle. For today's world, safety and security plays an important role, hence we move towards to provide a good safety and intelligent security system while travelling. Vehicles are important in today's fast-paced society. Hence, having a vehicle now a days is considered a necessity, compared to the past where it was considered a luxury. In this thriving society, more and more vehicles are produced to meet the increasing demands of people and businesses from all of the world. Hence it is necessary to provide better safety and security features to them. Hence this project aims to design an embedded system for avoiding accident.***
***Keywords:*** ***alerting system via buzzer, detect drowsiness, ir trans-reflective sensor module, monitor eye blinking rate.***

## I. INTRODUCTION

Driver vehicle is the first place where safety starts. Hence we must try to equip it with the latest technologies and to make safe machine and also to keep our self and our loved ones safe. We know that safety of driver of the vehicle is always important. Warning alerts and alarms are security systems incorporated in the cars and trucks to alert driver about various factors like exceeding speed limit or detecting alcohol or other parameters. These are designed to make the driver and passengers aware of safety which is important in most of the time and cases. In the same way here an embedded system has been designed to make the journey of the passengers inside a vehicle safe and secure with various recently found safety and security. Here using a IR transmitter and receiver the controller takes a input from IR that will be high or low according to driver. And send clear signal to buzzer and it will detect the driver's position with this alerting system we can monitor drowsiness.

## II. LITERATURE REVIEW

*A. Murugan Ezhumalai, Venkat Subramanian, Venkatraman, Drowsy Driver Detection and Accident Prevention System using Bio-Medical Electronics*

The traditional vehicle-based and vision based drowsy detection become apparent only after the driver starts to sleep, which is often too late to prevent an accident. In this proposed project a buzzer with low power consumption, is placed near the driver which would wake up the driver while he falls asleep while driving. The EEG sensor senses the brain signals and also the eye blink of the driver using ADS1299, and the entire device is operated using an Op-amp TLV 2760. The EEG signal is converted to digital using ADS1299 Analog front end and the output is acquired using MSP430G2553. The speed of the car will be varied according to the EEG signals. If the car slows down the indication is displayed at the back of the car using a LED display. Thus a sensor able to detect the activities and components of brain is important for comprehensive care and analysis of body conditions. The Low cost embedded drowsy driver detection system determines the sensor result and if it is below or above the optimum value it will indicate by the buzzer and the LED indication at the back of the car will help others viewing the vehicle slowing down.

*B. Lorate Shiny, A.Rajakumaran, S.Vijay, Vehicle Control System with Accident Prevention by using IR Transceiver*

The project presented here is an approach towards vehicle navigation & safety implementation. As the title suggests, the project is aimed at automatically sensing the areas / zones like "School zone", "Work zone" or "Curve zone". As an example, near school zone, the sign board displays "School Zone Ahead, Drive Slowly", or near construction area, "Drive slowly, Work under construction". Drivers go at very high speed usually near school zone, or indulge in speeding causing inconvenience to the other vehicle users and pedestrians. Even though these are meant for the safety of the vehicles traveling and also for the general public, it is not usually practiced and ignored by the vehicle drivers. The main objective is to design a Vehicle controller meant for vehicle speed control and monitors the zones, which can run on an embedded system. Vehicle Controller can be custom designed to fit into a vehicle dashboard, and displays information on the vehicle. The project is composed of two separate units: zone status transmitter unit and receiver (speed display and control) unit. Once the information is received from the zones, the vehicle embedded unit automatically alerts the driver, and otherwise vehicle controller unit automatically reduces the speed.


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*C. Aishwarya S.R, Ashish Rai, Charitha, Prasanth M.A, Savitha S.C, An IoT Based Accident Prevention & Tracking System for Night Drivers*

Fatal Road accidents can be easily avoided by understanding the psychological state of drivers. Majority of road accidents occur during night driving due to drowsiness state of vehicle drivers (Subject). This paper provides Eye Blink Monitoring System (EBM) that alerts the subject during state of drowsiness. An embedded system based on psychological state of Subject by monitoring eye movements and head movements are useful in warning drivers during initial sleep cycle phase of drowsiness. The physiological sleep state analysis of subject can be determined by monitoring subject eye-blink rate using an IR sensor and head movement using an accelerometer. A normal eye blink rate has no effect on the output of the system. However, if subject is in extreme state of sleep-cycle, then IR sensor receives abnormal eye blinking rate & an alarm is initiated to wake the subject. An Internet of Things (IOT) enabled sensors are used to transmit the entire data collected by sensors over a smart grid network for quick response team to take actions under emergency conditions.

## III. BLOCK DIAGRAM

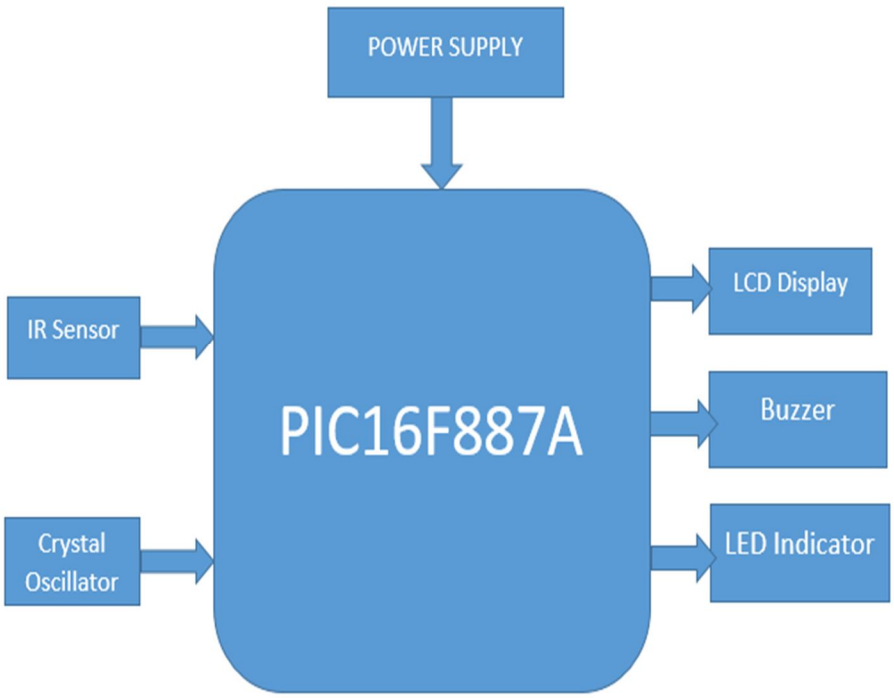


Fig no.1 Block Diagram

The main aim to develop the desired system is to prevent the accidents by drowsiness. Here I am using IR reflective obstacle sensor to detect the position of eye. Basically the eye blinking rate is 0.3 seconds, so for detecting drowsiness, it should be greater than the blinking rate for transmitting and receiving signal of eye. If eyes are opened then sensor gives the low signal to the controller, and if the eyes are closed till 4 sec then the sensor gives high signal to the controller.

The output from the sensor are passed to the 16F877A PIC controller. Here Controller gets the high or low signal and process it to make the buzzer ON or OFF and LCD to display the data “driver slept”. When controller detects drowsiness, buzzer gets continuously ON, giving notification on LCD Display. This will help to protect driver from drowsiness and it will help to prevent accidents efficiently.


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## IV. FLOWCHART

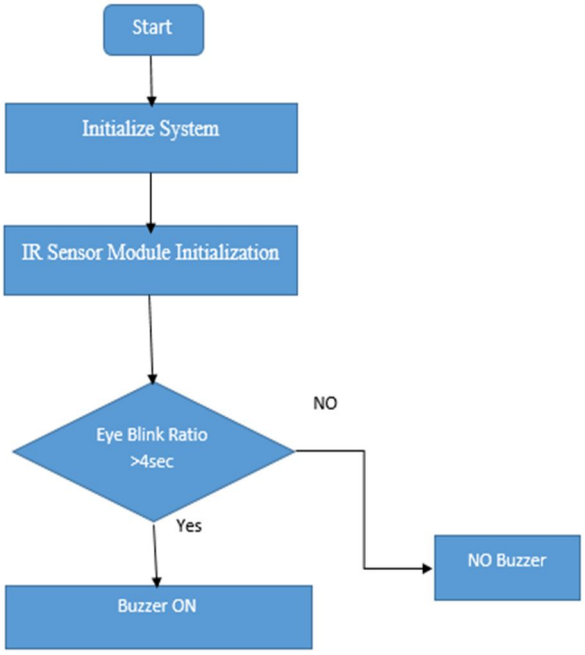


Fig no. 3 Working Flowchart

## V. OBJECTIVE

*A.* By using IR sensor module kit, monitor the eye blinking ratio rate which is strongest cause of accidents due to drowsiness.

*B.* Eyes of driver measures blinking rate greater than 4 seconds, then it gets indication to driver by activating buzzer and tries to awake driver from drowsiness

*C.* It helps to come the necessity to provide more and more safety and security features to vehicle.

*D.* It also helps to Reduce a day to day life increasing graph of accident by drowsiness.

## REFERENCES

[1] S. P. Bhumkar, V. V. Deotare, R. V. Babar "Intelligent Car System for Accident Prevention Using ARM-7", International Journal of Emerging Technology and Advanced Engineering Volume: 2, Issue: 4, April 2012.

[2] M. H Mohamad, Mohd Amin Bin Hasanuddin, MohdHafizzie Bin Ramli "Automobile Accident Prevention System Embedded with Alcohol Detector", International Journal of Review in Electronics & Communication Engineering (IJRECE) Volume: 1 – Issue: 4 October 2013.

[3] Jyotika Kapur "Accident Prevention via Bluetooth", International Journal of Engineering Science and Innovative Technology (IJESIT) Volume: 2, Issue: 4, July 2013.

[4] Leslie Cromwell, Fred J. Weibell and Erich A. Pfeiffer, "Biomedical Instrumentation and measurements", 2nd Edition, Printice Hall India Pvt. Ltd., 2001

[5] Grace R. 2001, "Drowsy driver monitor and warning system", International driving symposium on human factors in driver assessment, training and vehicle design, Aspen, CO; pp. 201–208. Citeseer

[6] Lin CT, Chen YC, Wu RC, Liang SF, Huang TY. "Assessment of Driver's Driving Performance and Alertness Using EEG-based Fuzzy Neural Networks", ISCAS 2005. IEEE International Symposium on Circuits and Systems. 2005; 1:152–5.

[7] **"**An IoT Based Accident Prevention & Tracking System for Night Drivers"- Aishwarya S.R, Ashish Rai, Charitha, Prasanth M.A, Savitha S.C.



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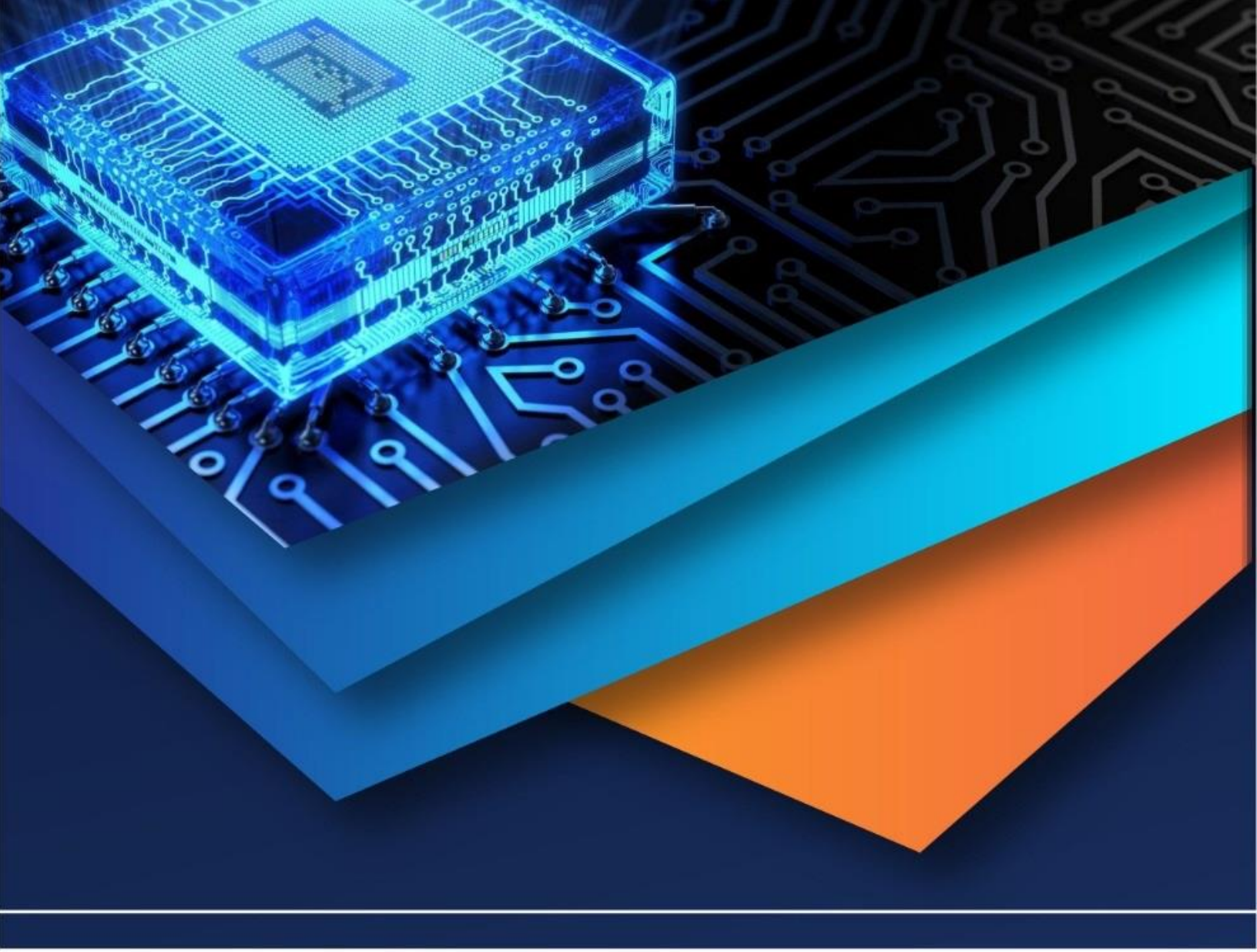

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